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ABSTRACT

Traditional descriptions of Italian phonology have occasionally suggested that some type of connection exists between "raddoppiamento sintattico" (RS) and the word internal consonant length contrast. (RS is defined as a systematic lengthening of the first consonant of the second word in a two-word sequence in certain syntactic and phonological environments.) This paper claims not only that some type of connection exists, but that there is a very specific type of relationship, and that the presence or absence of RS in a given variety of Italian depends on the presence or absence of contrastive consonant length in that variety. These claims are tested in two varieties of standard Italian, those of Rome and Milan. On the basis of these measurements, it is demonstrated that the patterns of consonant length created by RS do directly reflect the patterns of consonant length within words. The existence of RS in Rome reflects the existence of a word internal consonant length contrast in this variety of Italian, while the lack of RS in Milan reflects the lack of a word internal consistent consonant length contrast in the Milanese variety of Italian. It is also shown that while RS is not obligatory in those varieties of Italian that manifest it, the relative probability of its occurrence appears to be governed by certain syntactic factors. (Author/AMH)

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AN INTERACTION BETWEEN STRESS AND LENGTH IN ITALIAN

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1. Introduction

Traditional descriptions of Italian (e.g. Camilli (1947), Muljačić (1972), Tagliavini (1965)), which typically refer to standard Tuscan Italian, mention three types of length phenomena:

a. consonant length is contrastive word internally;
b. vowel length is predictable on the basis of stress and syllable structure (i.e. a vowel is long if it is in a word internal stressed open syllable; all other vowels are short);
c. a sandhi rule, raddoppiamento sintattico (RS) "syntactic doubling", operates across word boundaries causing a systematic lengthening of the initial consonant of the second word in a sequence $word_1$ $word_2$, under certain syntactic and phonological conditions.

The syntactic conditions are discussed in Napole & Nespor (1979) and essentially require that $word_1$ be the left branch of the first node that dominates both $word_1$ and $word_2$.

The single phonological condition shared by all varieties of Italian that exhibit RS is that $word_1$ must end in a stressed vowel, though many varieties of Italian have additional environments. At present, we are only concerned with the stressed final vowel environment since it is in a sense the lowest common denominator, and our research is a comparative study of RS in five different varieties of Italian.[1)]

Previous analyses of Italian have occasionally suggested that there might be some connection between RS and word internal consonant length. It is our hypothesis not only that some connection exists, but that there is a very direct connection. That is,

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we predict that the occurrence of RS reflects the length patterns within words and furthermore, that the length patterns across word boundaries depend on the presence or absence of contrastive consonant length word internally.

We are in the process of testing our hypothesis by making spectrographic measurements of four types of vowel + consonant sequences, as exemplified in (1).

(1)	a.	tó [p] a	"mouse"
	b.	tó [p:] a	"keyhole"
	c.	invénto# [p] arole	"I invent words"
	d.	inventó# [p:] arole	"he invented words"

The findings discussed in this paper are from two cities, Rome, where RS does occur, and Milan, where RS does not occur.

2. Findings

If we first consider the patterns across word boundaries, in the environment where we expect Milan and Rome to be the same, that is, where there is a short unstressed vowel followed by a short consonant across a word boundary (cf. (1c)), we do, in fact, find similar patterns. The average vowel and consonant lengths are essentially the same in the two cities.

However, if we look at the case of the stressed final vowel followed by a consonant across a word boundary (cf. (1d)), we find different patterns in the two cities. First of all, the total vowel + consonant sequence is longer in Rome than in Milan. Furthermore, most of this difference is due to the greater length of the consonant in Rome. Specifically, the average difference in length between the long and short consonants in Rome is three times the difference between the corresponding consonants in Milan. Thus, our measurements show that RS is present in Rome, but not in Milan.

Now, if our original hypothesis is correct, we should find a relationship between the length patterns across word boundaries and those within words, and in fact we do. First of all, in the environment stressed vowel + long consonant (cf. (1b)), which corresponds to the stressed final vowel followed by a consonant across a word boundary (where RS makes the consonant long, as in (1d), we find that the length of the vowel + consonant sequence is longer in Rome than in Milan (as it is across word boundaries). Futhermore, most of the difference is due to the length of the consonants. Specifically, the difference in length between the long and short consonants in Rome is, once again, three times the difference between the corresponding consonants in Milan. Since the difference between long and short consonants is minimal and rather unsystematic in Milan, we think we can conclude that, while consonant length is contrastive in Rome, it is not in Milan.

Before going on to discuss the implications of these findings, however, there is one more pattern that we must mention. In Rome, there were some cases where the syntactic and phonological conditions for RS were met, but where RS did not appear. Instead, something else happened, namely, the final stressed vowel of word$_1$ was lengthened. That is, inventó parole became invent[ó:]#parole instead of inventó#[p:]arole.

3. Implications and Conclusions

First of all, our original hypothesis is confirmed. That is, at least in the two varieties of Italian we have examined so far, the occurrence of RS does reflect the presence or absence of word internal contrastive consonant length. In other words, in Rome we find both contrastive consonant length and RS, and in Milan we find the opposite, neither contrastive consonant length nor RS.

Our hypothesis, however, was actually stronger than this: we claimed that the occurrence of RS depends on the consonant length contrast, not just that the two are found together. To understand what "depends on" means in this case, we have to look more closely at the situation in Rome. (Milan is obviously not relevant at this point since the phenomena in question are absent.)

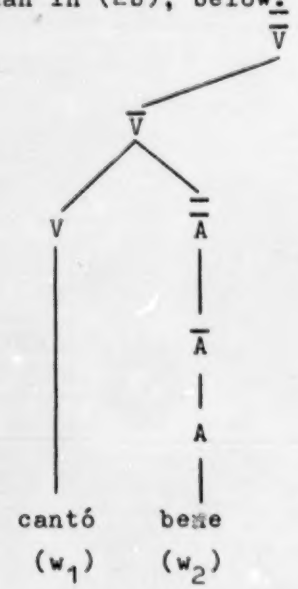
What happens in connected speech when external sandhi rules such as RS occur is, in effect, that the word boundaries are erased, allowing the two adjacent words to affect each other in some way. However, erasing the word boundaries between words such as inventó "he invented" and parole "words" results in a sequence that violates one of the conditions of well formedness within words. That is, the stressed ó of inventó is now a medial vowel in an open syllable, and it is short. It was mentioned above, however, that word internally a stressed vowel is long if it is in an open syllable, or short if it is in a closed syllable. This leaves one of two possibilities, either to close the syllable and keep the vowel short, or to lengthen the vowel and maintain the open syllable. The first alternative is precisely what happens with RS: the initial consonant of $word_2$ is lengthened, and since long consonants are ambisyllabic in Italian, this lengthened consonant also serves to close the stressed final syllable of the preceding word. The second alternative also occurs occasionally, in those cases when RS does not occur but where the final vowel of $word_1$ is lengthened instead.

Thus, we can say that RS depends on the presence of a word internal consonant length contrast since RS applies to fulfill a well formedness constraint on vowel length, which in turn depends on the consonant length contrast. Where no systematic long consonants exist word internally, as in Milan, vowel length is not predictable since there are no ambisyllabic long consonants serving as the onset of one syllable while at the same time

also serving as the coda of the preceding syllable. Thus, in such a variety of Italian, when the word boundaries are erased in connected speech, a short stressed vowel in an open medial syllable does not necessarily constitute a violation of any word level well formedness constraint, and therefore there is no reason for RS to apply.

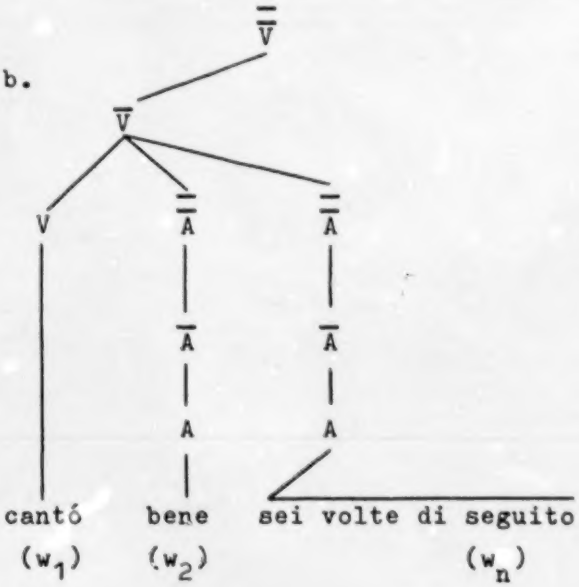
There is one final question that should be dealt with here: in Rome, what determines whether RS or vowel lengthening occurs? Although we cannot actually predict which process will occur, it turns out that there are certain syntactic environments where RS is more probable than others. Specifically, RS is more likely when $word_1$ and $word_2$ are exhaustive constituents of the node that directly dominates them. Thus, RS is more probable in (2a) than in (2b), and consequently, vowel lengthening is less likely in (2a) than in (2b), below.

(2) a.



"he sang well"

b.



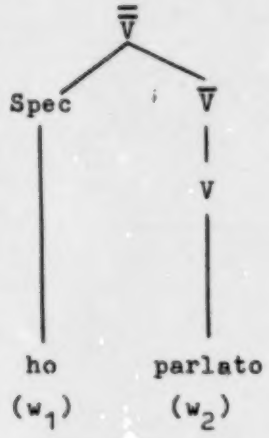
"he sang well six times in a row"

Of course, the obvious question is why this should be the case. We would like to suggest that the answer lies in the nature of

Italian phrase stress. In Italian, the primary stress of a phrase is always on the last word, thus on word$_2$ in (2a), but on word$_n$ in (2b). Since, in general, strongly stressed elements tend to attract weaker neighboring elements, it seems that when word$_2$ (bene in (2a)), bears the primary phrase stress, the pull on word$_1$ (cantó in (2a)) is stronger than when word$_2$ does not bear the primary phrase stress. And, furthermore, it seems logical that where the relationship or pull is the strongest, the more perceptible way of expressing this will be favored. That is, we propose that RS is favored since it yields a long consonant, a phonologically contrastive element, whereas vowel lengthening only introduces a predictable phonetic variant, which is in some way less perceptible.

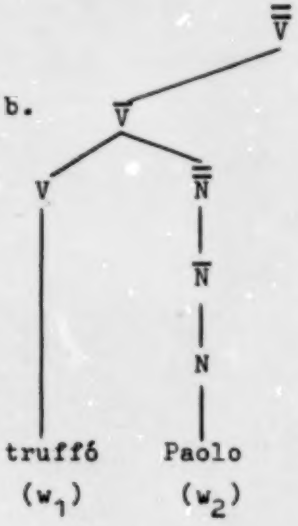
Finally, on the basis of another stress phenomenon we have been studying, stress retraction in northern varieties of Italian, which has strikingly similar conditions to RS, we would like to make another prediction about the probability of occurrence of RS. That is, RS, like stress retraction, is more probable when word$_1$ is the specifier of a phrase and word$_2$ is the head. That is, RS would be more likely to occur in (3a) than in (3b), below, for essentially the same reasons as in the examples in (2). The relation, though in this case it is syntactic instead of phonological, between word$_1$ and word$_2$ is in some sense stronger in (3a), where no new $\bar{\bar{X}}$ is introduced by word$_2$, than in (3b). Thus, once again, the rule with the more perceptible output should be favored. That is, RS would be favored since it yields a phonologically contrastive element, as opposed to vowel lengthening which only introduces a predictable phonetic variant. Of course, this prediction remains to be tested with additional data.

3. a.



"I have spoken"

b.



"he deceived Paul"

To briefly summarize, we have shown that at least in Rome and Milan, the occurrence of RS depends on the presence or absence of word internal contrastive consonant length; and furthermore that the probability that RS will occur is influenced by certain syntactic factors.

NOTE

1) The research reported in this paper is the first part of a larger study supported by a grant from the University of Amsterdam, which will eventually examine length and stress phenomena in the Italian of Milan, Padova, Pisa, Rome and Palermo.

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